

# PowerLogic™ DM6000 Series Digital Meters

## Quick Start Guide

PLSED309040EN

08/2010



**Schneider**  
Electric

## SECTION 1: BEFORE YOU BEGIN

Read and follow all safety precautions and instructions before installing and working with this equipment.

### Safety Precautions

#### ⚠ DANGER

##### HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH

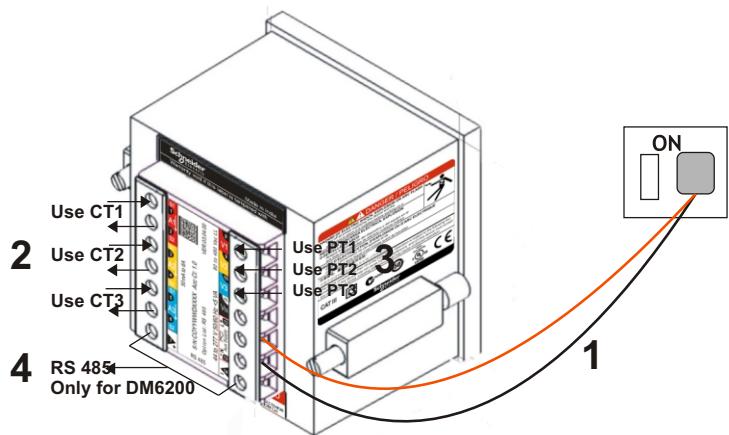
- Apply appropriate personal protective equipment (PPE) and follow safe electrical work practices. In the USA, see NFPA 70E.
- Only qualified electrical workers should install this equipment. Such work should be performed only after reading this entire set of instructions.
- If the equipment is not used in the manner specified by the manufacturer, the protection provided by the equipment may be impaired.
- NEVER work alone.
- Before performing visual inspections, tests, or maintenance on this equipment, disconnect all sources of electric power. Assume that all circuits are live until they have been completely de-energized, tested, and tagged. Pay particular attention to the design of the power system. Consider all sources of power, including the possibility of backfeeding.
- Turn off all power supplying the digital meter and the equipment in which it is installed before working on it.
- Always use a properly rated voltage sensing device to confirm that all power is off.
- Before closing all covers and doors, inspect the work area for tools and objects that may have been left inside the equipment.
- When removing or installing panels do not allow them to extend into the energized bus.
- The successful operation of this equipment depends upon proper handling, installation, and operation. Neglecting fundamental installation requirements may lead to personal injury as well as damage to electrical equipment or other property.
- NEVER bypass external fusing.
- NEVER short the secondary of a PT.
- NEVER open circuit a CT; use the shorting block to short circuit the leads of the CT before removing the connection from the digital meter.
- Before performing Dielectric (Hi-Pot) or Megger testing on any equipment in which the digital meter is installed, disconnect all input and output wires to the digital meter. High voltage testing may damage electronic components contained in the digital meter.
- The digital meter should be installed in a suitable electrical enclosure.

**Failure to follow these instructions will result in death or serious injury**

### PLEASE NOTE

Electrical equipment should be installed, operated, serviced, and maintained only by qualified personnel. No responsibility is assumed by Schneider Electric for any consequences arising out of the use of this material.

## SECTION 2: QUICK SETUP



1. Connect auxiliary supply (control power) 44 to 277 VAC/DC to terminals 12 and 13 in order to power ON the digital meter.

- Keep pressed for two seconds, while powering up the digital meter.
- The digital meter directly enters into the setup menu and displays **EDIT A.PRI 100.0**. This is the easiest way to enter the PROG menu setup.

**Program the following setup parameters for accurate readings:**

- A.pri, A.sec: Set these values to match your CT primary and secondary values. For example, if your CT ratio is 200:5, set A.pri = 200.0 and A.sec = 5.000.
- V.pri, V.sec:
  - Set these values to match the input voltage VLL of the circuit, if the input voltage < 480 VAC LL. For example, if the input voltage = 300 VAC LL, set V.pri = 300.0 and V.sec = 300.0.
  - Use a potential transformer (PT/VT), if the input voltage > 480 VAC LL. Set the V.pri and V.sec values to match the primary and secondary of the PT(VT) respectively. For example, if PT(VT) ratio is 11 kV:110, set V.pri = 11.00 k and V.sec = 110.0.
- Select one of the following systems according to your wiring configuration:
  - SYS: STAR/WYE for 3-phase 4-wire system
  - SYS: DLTA for 3-phase 3-wire system
  - SYS: 2-phase for 2-phase 3-wire system
  - SYS: Single-phase for single-phase 2-wire system

2. Connect the current transformers (CTs).

Ct1	CT2	CT3
1, 2	3, 4	5, 6

3. Connect the voltage inputs. Use PT(VT) if input voltage > 480 VAC LL.

Pt1	PT2	PT3	Neutral
8	9	10	11

4. RS 485 terminals (only for DM6200)

+ ve	- ve
7	14

**NOTE:** Refer to "SECTION 5: PROG MENU SETUP, CLR" on page 5, for details about PROG menu setup, A.pri, A.sec, V.pri, V.sec etc.

## SECTION 3: INSTALLATION

### Mechanical and Electrical Installation

#### Connecting cable

	Insulation Rating	Current Rating
Voltage Circuit	> 600 VAC	> 0.1 A
Current Circuit	> 600 VAC	> 7.5 A or 2.5 mm <sup>2</sup> (14 AWG) minimum

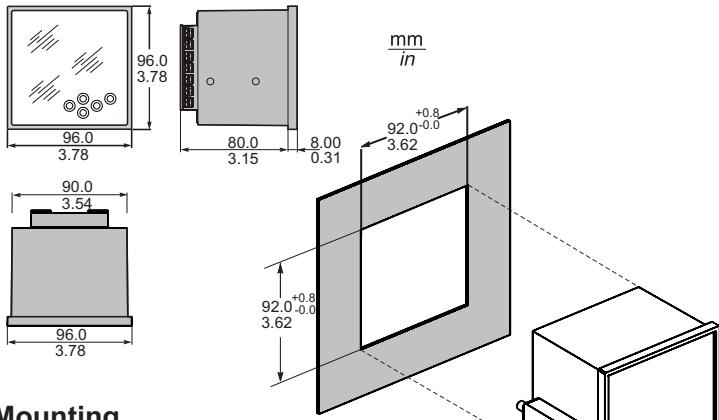
#### Tools and equipments

Driver	Torque driver preferred; may use hand screwdriver.
Tip	Phillips tip preferred, but you can also use flat. Do not use Pozidriv tip.
Screw head Diameter	3.5 mm (0.14 in.)
Shaft diameter	< 5 mm (0.2 in.). Diameter ≥ 5 mm (0.2 in.) will get stuck in the cover.
Torque	Tightening Torque: 0.25 to 1 N.m (2.21 to 8.85 lb-in) Loosening Torque: 0.8 to 1 N.m (7.08 to 8.85 lb-in) Torque > 1 N.m (8.85 lb-in) may strip the screw or break the cover.
Screw Travel	6 mm (0.24 in.) less wire thickness

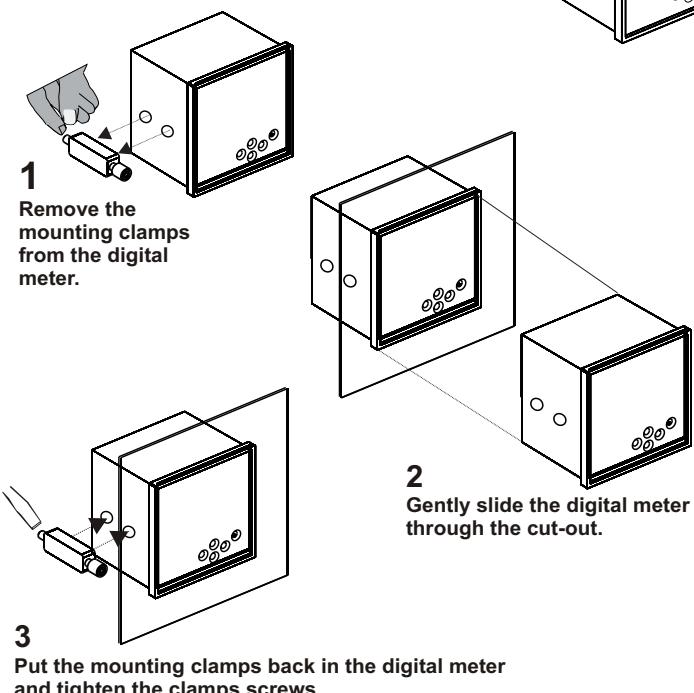
 Schneider Electric recommends the use of insulated sleeved U lugs (2.5 mm<sup>2</sup>/14 AWG) for wiring terminals.

**NOTE:** Installations should include a disconnecting device, like a switch or circuit breaker, with clear ON/OFF markings to turn-off the auxiliary supply (control power). The disconnecting device should be placed within the reach of the equipment and the operator.

### Mechanical Dimensions and Panel Cut-out



#### Mounting



### Connection Diagrams

#### Supported System Types

System type	Meter configuration	Figure number
WYE	StAR/WyE	1
Delta, Open Delta	dLtA	2, 3
2-phase	2 Ph	4
Single-phase	1 Ph	5

#### Connection Diagram Symbols

Symbol	Description
	Current transformer (CT)
	Fuse
	Shorting block
	Potential transformer (PT)

Figure 1: 3-Phase 4-Wire WYE connection with 3 CTs and 3 PTs

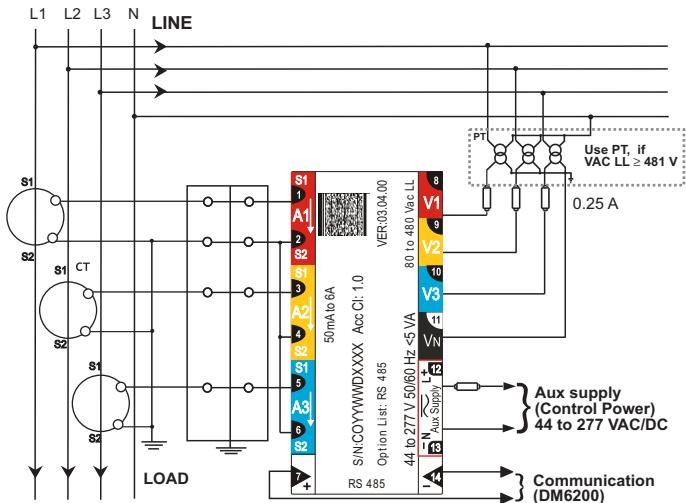
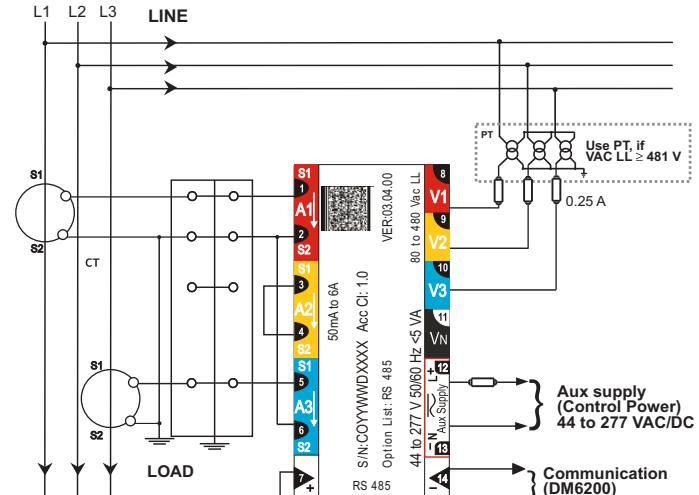


Figure 2: 3-phase 3-wire delta connection with 2 CTs and 3 PTs



## SECTION 3: INSTALLATION (Cont'd)

### Connection Diagrams (Cont'd)

Figure 3: 3-phase 3-wire open delta connection with 2 CTs and 2 PTs

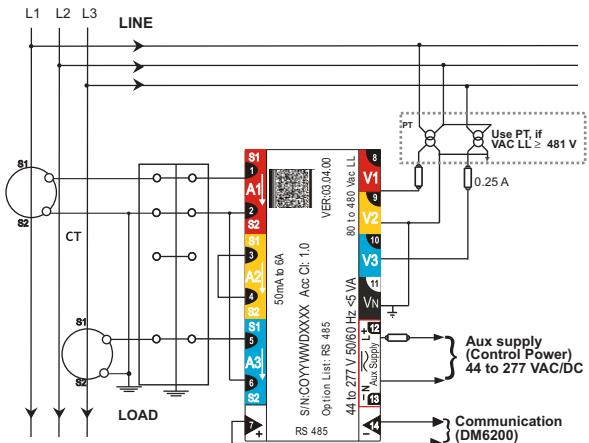


Figure 4: 2-phase 3-wire connection with 2 CTs

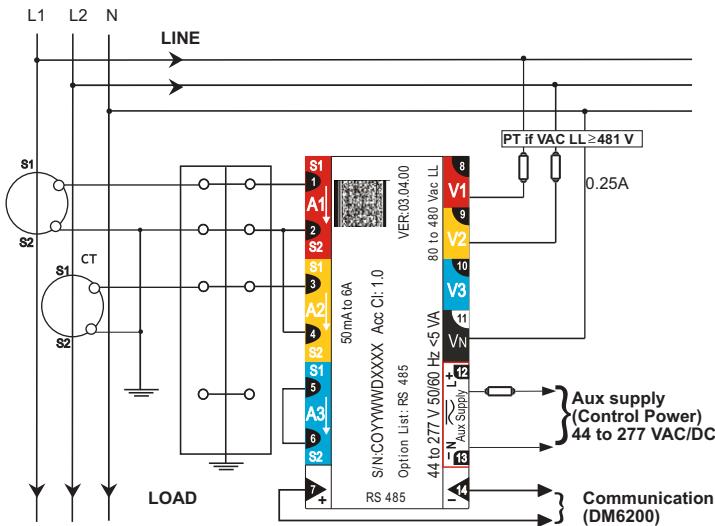
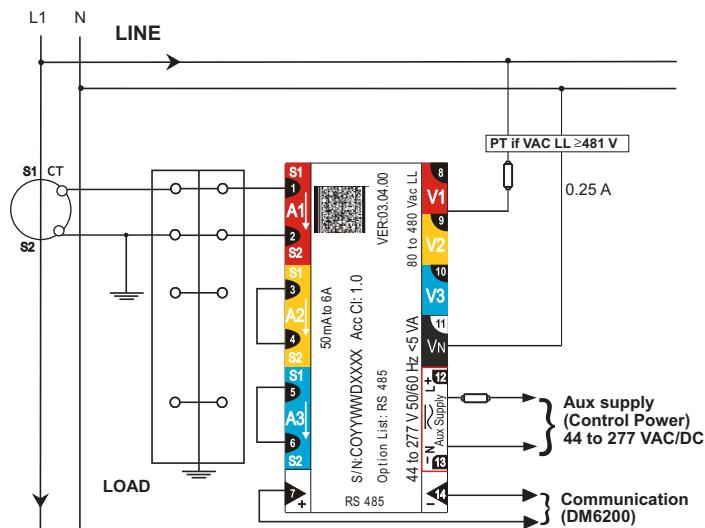


Figure 5: Single-phase connection with 1 CT



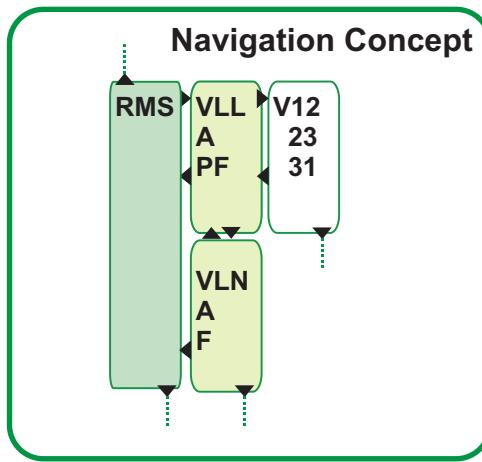
## SECTION 4: KEYPAD SETUP

### Keys Description

	<b>Right Key:</b> Go forward to sub-parameters page.
	<b>Left Key:</b> Go back towards main parameters page.
	<b>Up Key:</b> Scroll up through the display pages at the level, within the same function.
	<b>Down Key:</b> Scroll down through the display pages at the same level through all the functions.
	<b>TURBO Key:</b> TURBO key provides one-touch access to the most commonly used parameters pages (factory set). The TURBO pages for DM6000 series digital meters are <b>RMS (home page)</b> , <b>VLL</b> , <b>A</b> , <b>PF</b> , <b>VLN</b> , <b>A</b> , <b>F</b> . If you are lost, use the TURBO key to quickly return to the RMS page.

See the online DM6000 user manual at [www.powerlogic.com](http://www.powerlogic.com) for more information on keys and other features.

### Keypad Operation



The following example explains how you can navigate from the **RMS** page to the **VLN A F** page, back to **RMS** in DM6000 series digital meters.

1. From the RMS page, press . The display shows **VLL A PF**.
2. Press . The display shows **VLN A F**.
3. Press to go back to **RMS**.

*NOTE: Use the and to navigate to the other pages on the same level. Use to go to the sub-parameter pages. Use to go back to the main parameter pages.*

## SECTION 5: PROG MENU SETUP, CLR

### PROG Menu • Setup

The setup menu gives the complete list of user-programmable parameters.

- You must configure the digital meter to match the application settings before use. Otherwise, readings will be wrong.
- All the setup parameters can be re-programmed, using SET. However, the following settings critically determine the scaling of the measured readings: SYS (Star/wye or Delta or 2-phase or single-phase), Vpri, Vsec, Apri, Asec.
- The scaling may be used to minimize the errors in reading due to instrument transformer errors. However, wrong settings will introduce errors in readings on other running systems.

You can enter Setup menu in

- Edit mode – to view or edit set parameters
- View only mode – to view the set parameters

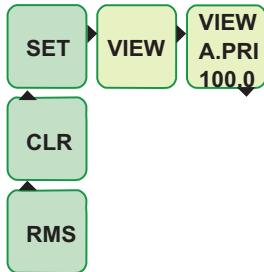
#### ⚠ CAUTION

##### HAZARD OF UNINTENDED OPERATION

Only qualified personnel are authorized to set up the digital meter.

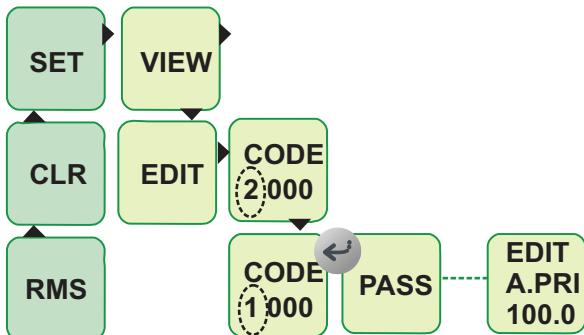
Failure to follow these instructions can result in injury or equipment damage.

### Enter Setup Menu in View (Read-Only) Mode



- From RMS, press . The display shows CLR.
- Press . The display shows SET.
- Press . The display shows VIEW.
- Press . Use or to scroll and view the setup parameters and their current settings.

### Enter Setup Menu in Edit Mode



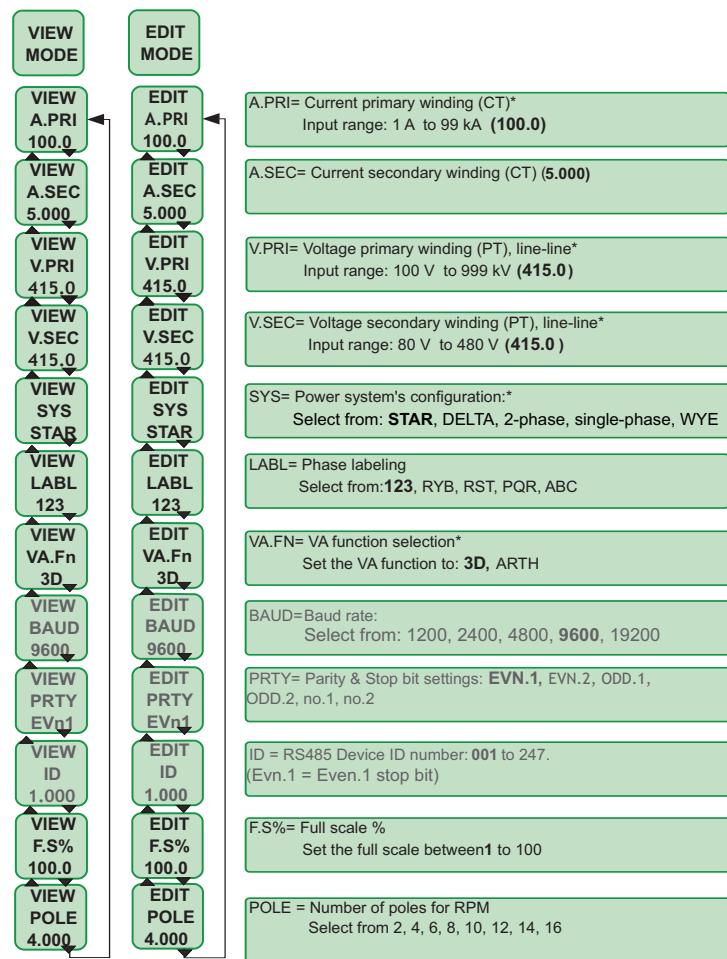
NOTE: indicates blinking/editable  
 means blinking 1

- From RMS press . The display shows CLR.
- Press . The display shows SET.
- Press . The display shows VIEW.
- Press . The display shows EDIT. CODE entry is required to edit the setup parameters.
- Press for two seconds. The display shows CODE 2000 with blinking 2. The factory set CODE is 1000.
- Press . The display shows CODE 1000 with blinking 1.
- Press once or four times to accept the new CODE value.

The display flashes PASS and then EDIT A.PRI 100.0 indicating the successful entry to setup menu in edit mode.

NOTE: If you enter a wrong code, the display flashes FAIL, then displays EDIT. Repeat the procedure and make sure that you enter correct code.

### Setup Parameters in View and Edit Modes



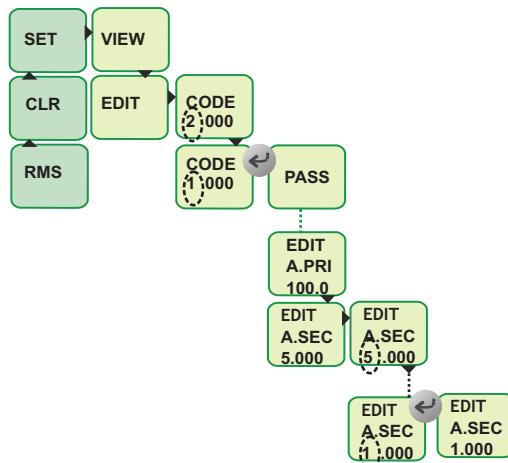
NOTE: Default Setup values are given in **BOLD**.

\*Changing these values while the device is in use, is not recommended.  
BAUD, PRTY, and ID are applicable only for DM6200.

### Edit Set Parameters

This example explains how to edit the **A.Sec** from **5.000** to **1.000** in the Edit Setup menu of DM6000 series digital meters. For easy understanding, the setup editing is explained in two parts: **edit and accept setup**, and **save new value in the setup**.

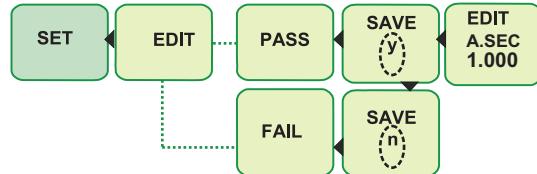
#### Edit and Accept Setup



NOTE: indicates blinking/editable  
 means blinking 2

**SECTION 5: PROG MENU SETUP, CLR (Cont'd)****Edit Set Parameters (Cont'd)**

1. After you have successfully entered setup menu in edit mode (Refer to "Enter setup menu in Edit mode" on page 5), press . The display shows **EDIT A.SEC 5.000**.
2. Press . The display shows **EDIT A.SEC 5.000** with blinking 5. You can edit this value.
3. Press four times. The display shows **EDIT A.SEC 1.000** with blinking 1.
4. Press once to accept the new value.
5. If you want to edit next parameter, press and repeat the steps.

**Save New Value to Setup**

NOTE: indicates blinking/editable  
 means blinking y

1. After you edit the parameter as described above, press . The display shows **SAVE y** with a blinking y.

2. Press or to save the new value.

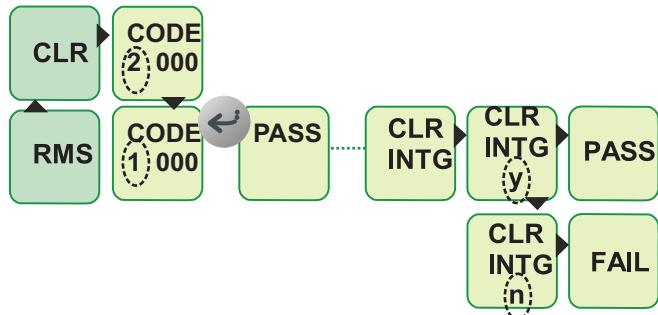
The display flashes **PASS** and then shows **EDIT**.

3. Press to go back to **SET**.

NOTE: If you do not want to save the new value, press to change the value from **SAVE y** to **SAVE n** in step 1. Then press or . The display flashes **FAIL** and then shows **EDIT**. Proceed to step 3.

**CLR INTG**

DM6000 series digital meters are equipped with INTG, where the ON hours and INTR values are accumulated.



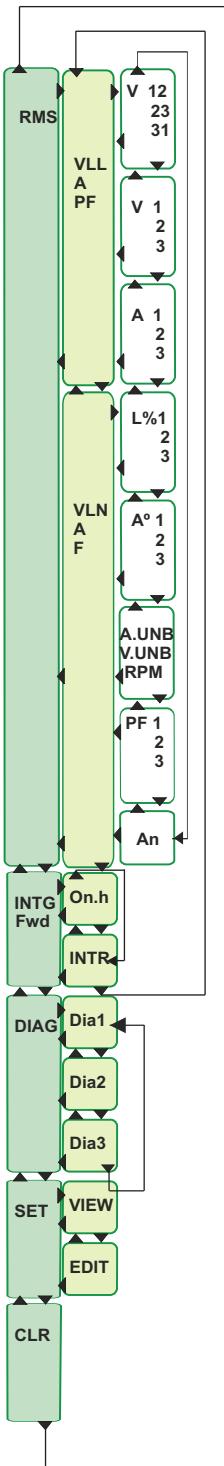
NOTE: indicates blinking/editable  
 means blinking y

1. From **RMS**, press . The display shows **CLR**. **CODE** entry is required to clear the **INTG** values.
2. Press for two seconds. The display shows **CODE 2000** with blinking 2. The factory set **CODE** is **1000**.
3. Press . The display shows **CODE 1000** with blinking 1.
4. Press once or four times to accept the new value.

After the successful **CODE** entry, the display shows **CLR INTG**.

5. In order to clear **INTG**, press . The display shows **CLR INTG y** with blinking y.
6. Press or to clear **INTG**. The display flashes **PASS** and then **CLR INTG**.
7. Press . The display shows **CLR**.
8. Press to return to **RMS** page.

NOTE: If you do not want to clear the integrators, press to change the value from **CLR INTG y** to **CLR INTG n** in step 5. Then press or . The display flashes **FAIL** and then shows **CLR INTG**. Proceed to step 7.

**SECTION 6: DM6000 SERIES MENU HIERARCHY**

RMS = RMS value display pages are in sub level

VLL = Phase-Phase voltage average  
A = Current average  
PF = Power Factor average

VLN = Phase-Neutral voltage average  
A = Current average  
F = Frequency in Hz

V12 = RMS voltage, phase 12  
V23 = RMS voltage, phase 23  
V31 = RMS voltage, phase 31

V1 = RMS voltage phase 1 to neutral  
V2 = RMS voltage phase 2 to neutral  
V3 = RMS voltage phase 3 to neutral

A1 = RMS current, phase 1  
A2 = RMS current, phase 2  
A3 = RMS current, phase 3

L1% = % of load, phase 1  
L2% = % of load, phase 2  
L3% = % of load, phase 3

A°1 = Current phase angle, phase 1 in degrees  
A°2 = Current phase angle, phase 2 in degrees  
A°3 = Current phase angle, phase 3 in degrees

A.UNB = Current unbalance  
V.UNB = Voltage unbalance  
RPM = RPM of the motor

PF1 = Power factor, phase 1  
PF2 = Power factor, phase 2  
PF3 = Power factor, phase 3

An = Neutral current

INTG Fwd = Forward Integrator

On.h = Duration of supply ON

INTR = No of power interruptions

DIAG = represents diagnostic pages. The values contained in these pages are for factory testing only

Dia1 = Communication settings

Dia2 = Product model and version number

Dia3 = Display scanning for display LED check

SET = Has two modes: EDIT/VIEW set parameters

VIEW = To view simultaneous setup parameter name and value display

EDIT = To edit simultaneous setup parameter name and value display

CLR = Clears INTG values



---

**Schneider Electric Industries SAS**  
35, rue Joseph Monier  
CS 30323  
F - 92506 Rueil-Malmaison Cedex

For technical support:  
[Global-PMC-Tech-support@schneider-electric.com](mailto:Global-PMC-Tech-support@schneider-electric.com)  
(00) + 1 250 544 3010

Contact your local Schneider Electric sales representative for assistance or go to [www.schneider-electric.com](http://www.schneider-electric.com).

PowerLogic is a trademark of Schneider Electric.  
Other trademarks are the property of their respective owners.

Electrical equipment should be installed, operated, serviced, and maintained only by qualified personnel. No responsibility is assumed by Schneider Electric for any consequences arising out of the use of this material.

© 2010 Schneider Electric All Rights Reserved  
DM6000 QSG v03.04.00.d15